



STATE OF
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

M-1980-183 Pit 29 Q4 GW Level Monitoring

Joshua Oliver <joliver@brannan1.com>

Wed, Dec 20, 2017 at 8:49 AM

To: "Jared.Ebert@state.co.us" <Jared.Ebert@state.co.us>

Cc: Fred Marvel <fmarvel@brannan1.com>, Alex Schatz <aschatz@brannan1.com>

Mr. Ebert,

Please find the attached groundwater level monitoring results.

The French drain continues to operate well and there were no other major items of note at this time.

If you have any questions, please let me know.

Thank you,

Joshua Oliver

Environmental Manager



joliver@brannan1.com

O: 303.853.5159 | M: 303.472.1736 | F: 303.853.5233



4 attachments



M-1980-183 Pit 29 Q4 Groundwater Level Monitoring Cover Letter.pdf

43K



Pit 29 MW 1-4 Water Levels 12-19-17.pdf

105K



Pit 29 MW 1-4 Water Levels Table 12-19-17.pdf

32K



Pit 29 Wells and Reservoir Water Levels 12-19-17.pdf

1047K



December 20, 2017
Colorado Division of Reclamation, Mining and Safety
1313 Sherman St. Room 215
Denver, CO 80203

Re: Pit 29 M-1980-183 Groundwater Level Monitoring

Mr. Jared Ebert:

Please find the attached reservoir, MW-1, MW-2 and MW-4 quarterly readings, in addition to Pit 29 South cell water levels.

MW-4 datalogger monitoring and manual depth to groundwater monitoring continues to verify the functionality of the French drain project, which was completed in 2015 along the southern boundary of the western half of the property.

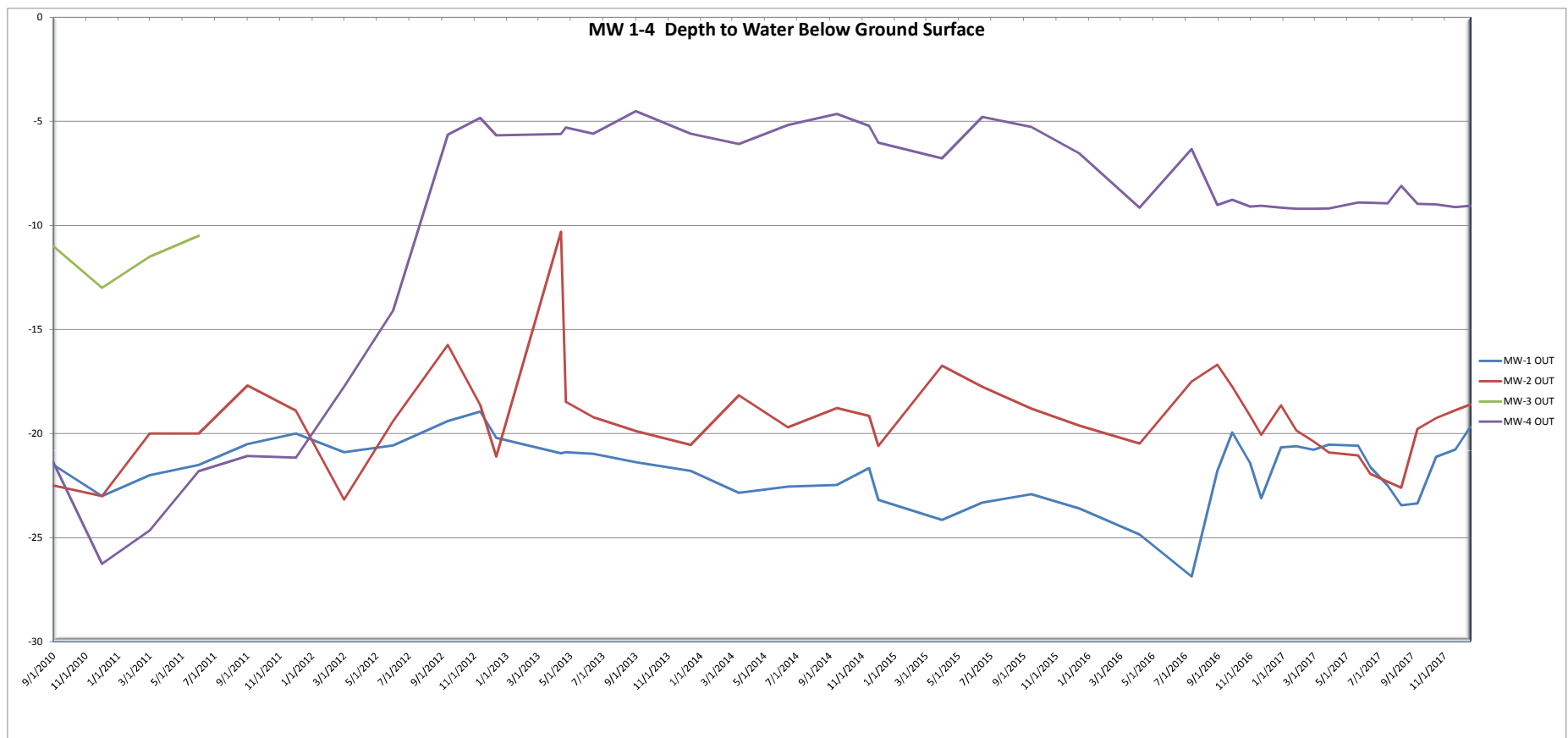
Groundwater levels in MW-1 and MW-2 are both within normal seasonal fluctuation ranges. MW-1 and MW-2 groundwater levels mirrored each other pretty closely over the quarter.

Brannan has not identified any issues during analysis of this data.

Sincerely,

A handwritten signature in black ink, appearing to read "Josh", followed by a long horizontal line.

Joshua Oliver
Environmental Manager
(303) 472-1736
joliver@brannan1.com



Brannan Pit #29				
Water Level Measurements				
Date Month-Year	Depth to Water (ft)			
	MW-1 OUT	MW-2 OUT	MW-3 OUT	MW-4 OUT
12/1/2005	21.50	22.50	11	NA
1/1/2006	23.00	23.00	13	NA
3/1/2006	22.00	20.00	11.5	NA
5/1/2006	21.50	20.00	10.5	NA
6/1/2010	20.50	17.70	N/A	NA
9/1/2010	20.00	18.90	N/A	21.40
12/1/2010	20.90	23.17	N/A	26.25
3/1/2011	20.57	19.40	N/A	24.66
6/1/2011	19.40	15.74	N/A	21.80
9/1/2011	18.94	18.63	N/A	21.08
12/1/2011	20.20	21.10	N/A	21.15
3/1/2012	20.95	10.30	N/A	17.75
6/1/2012	20.89	18.47	N/A	14.09
9/12/2012	20.97	19.21	N/A	5.64
11/12/2012	-	-	N/A	4.84
12/12/2012	21.79	20.54	N/A	5.67
4/13/2013	22.84	18.16	N/A	5.61
4/22/2013	22.55	19.70	N/A	5.30
6/13/2013	22.48	18.78	N/A	5.60
9/1/2013	21.66	19.15	N/A	4.52
12/13/2013	23.19	20.60	N/A	5.60
3/14/2014	24.15	16.75	N/A	6.09
6/14/2014	23.32	17.76	N/A	5.18
9/14/2014	22.91	18.80	N/A	4.64
11/14/2014	23.60	19.62	N/A	5.22
12/1/2014	24.85	20.48	N/A	6.02
3/31/2015	26.87	17.50	N/A	6.78
6/15/2015	21.79	16.69	N/A	4.79
9/15/2015	19.94	17.75	N/A	5.27
12/15/2015	21.42	19.15	N/A	6.54
4/6/2016	23.11	20.06	N/A	9.15
7/13/2016	20.66	18.64	N/A	6.33
8/30/2016	20.61	19.86	N/A	9.01
9/27/2016	20.78	20.37	N/A	8.77
10/31/2016	20.53	20.91	N/A	9.09
11/21/2016	20.58	21.05	N/A	9.05
12/28/2016	21.61	21.93	N/A	9.15
1/26/2017	22.49	22.31	N/A	9.20
2/27/2017	23.44	22.60	N/A	9.20
3/28/2017	23.35	19.78	N/A	9.19
5/22/2017	21.12	19.25	N/A	8.90
6/14/2017	20.76	18.88	N/A	8.91
7/17/2017	19.68	18.60	N/A	8.94
8/11/2017	19.81	19.5	N/A	8.11
9/11/2017	19.97	19.60	N/A	8.96
10/16/2017	20.42	20.30	N/A	8.99
11/21/2017	22.48	21.58	N/A	9.12
12/19/2017	22.39	22.14	N/A	9.06

